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SKETCHES OF TRAVEL IN SOUTH AMERICA

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THE BOTANICAL GARDEN IN RIO

The "Van Dyck" arrived at Rio on Sunday afternoon, January 27, and remained there until Tuesday morning, giving the passengers time to stretch their limbs a bit and look about the city. The place of greatest interest to me was the "Jardim Botanico," so I spent Monday morning there. Leaving the boat at seven, after a light breakfast, I walked up the Avenida to the Avenida Hotel and boarded a trolley which took me to the garden without transfer in less than an hour. I gave the conductor a 5 mil reis note, from which he extracted 400 reis for the fare one way, or about 4 cents. The route lay through a beautiful section of this most beautiful city, passing along or near the Avenida, the site of the recent Exposition, the harbor with its beaches, and the base of Corcovado where so many splendid homes are located, embowered in all the beauty of vegetation which the Tropics afford. Finally, the car was stopped on the Rua Jardim Botanico and I was put off at the entrance to the garden.

At this early hour, I was the only visitor, and I enjoyed the freshness and quiet and the singing of the birds all by myself, while wandering around under the fine old trees and watching the brilliant *Heliconia* butterflies flitting about in the sunny spaces. Everywhere there was cool shade, and restful benches, and pavilions, and the sound of water gurgling in brooks or leaping in cascades from the steep sides of Corcovado. Ferns and orchids and great climbing vines covered the ancient treetrunks while water-lilies and other aquatic plants adorned the streams and ponds. Even the lowly fungi forced themselves upon my attention in the shape of a splendid display of the greengilled *Lepiota* growing on the bank of a brook beneath a large breadfruit tree. There were 13 fine plants in the group and

some were shedding their spores in bluish-green clouds. This species has been named several times from South America, where it grows best and is sometimes eaten by the natives. Its northern limit is Ohio, where it goes under the name of *Lepiota Morgani* and is considered somewhat poisonous. The green spores are very characteristic.

Beyond a little glass house filled with delicate ferns I saw a laborer mowing the rough grass and stopped for a moment to watch him work. His scythe was short and very broad, and fixed to a long upright handle, which allowed him to stand upright while mowing. I noticed that he stopped to whet as often as laborers usually do, but we must remember the climate and the peculiar toughness of this particular grass. A large, well-filled water-jar reposed under a tree nearby. The tamancos he wore protected only his toes, and every few minutes a pebble or a thorn would have to be removed from some sensitive place between the flapping soles and the moving heels. A little plant which served for grass and did not require mowing was planted very generously throughout the grounds, especially in deeply shaded places. It is a very dark green, densely tufted, and has narrow, ribbon-like leaves resembling those of Crocus or Narcissus. I must get some of it for our greenhouses, because I am sure it would make an excellent bedding plant for the bases of palms and for spaces between trees that are planted out, being larger and darker than any we now have for this purpose.

But the trees in this famous old garden—who shall describe them! I am fond of trees and have watched them all my life, but I can not do these justice. The whole garden is really a grove of wonderful trees. The royal palms alone would make a story. There are many of them,—some planted in long avenues and others scattered,—and most of them over 100 feet high. The parent of them all, now 130 feet in height, was planted by King John VI, founder of the garden, on June 13, 1808. Mango and breadfruit trees are likewise abundant, the latter loaded with immense, rough fruits which keep falling and decaying, leaving behind masses of whitish seeds. Then there are great clumps of bamboos, rows of traveler's trees, royal poincianas, acacias, and trees that furnish rubber, cinnamon, cloves, nutmeg, camphor, and other products too numerous to mention. I shall visit the garden again on my return here in March, when I shall

live in one of the little chalets up on the side of Corcovado, surrounded by the virgin forest.

THE NEW YORK BOTANICAL GARDEN, BRONX PARK, N. Y. C.

WATER PLANTS OF THE KANAWAUKE LAKES

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The Kanawauke Lakes are a group of three small lakes between Rockland and Orange Counties, New York, in the Bear Mountain-Harriman section of the Palisades Interstate Park. Only one of these, the First Lake, is natural. This was formerly known as Little Long Pond. When the other lakes were formed by damming the outlet stream in 1914 the level of the First Lake was raised about three feet. The lakes are connected by short channels some eight feet wide in the narrowest places. First Lake is about half a mile long, Second and Third Lakes a little less than one mile each. All of them are narrow and comparatively shallow. The current from First Lake through the others is slight, even in spring and early summer when the water is high, later in the season there is practically no current except that caused by the wind. On the shores of the lakes are located a group of some twenty camps where about ten thousand boy scouts spend from two to eight weeks during the summer. There is, consequently, a good deal of rowing on the lakes, while a number of motor boats make daily trips from the headquarters building at the junction of the Second and Third Lakes to each of the camps.

It would seem as if the current, supplemented by the movements of the boats, would have resulted during the ten years since the dam was built in a fairly uniform distribution of the water plants of the lakes. This is very far from being the case. The original lake has an abundant flora, the shallower water everywhere, including the areas submerged when the level was raised, being crowded with plants and the new shore line bordered uniformly by water or marsh plants. The Second Lake is almost as well supplied with plants at the end nearest First Lake, but further down the number both of species and individuals decreases. In Third Lake there are few plants, the greatest